

Claims

1. An energy storage and delivery device comprising:

a capacitor portion consisting of singular or multiple capacitors for instantaneously capturing electrical energy from a power source for the purpose of charging a chargeable [the] battery portion,

a charge circuit portion which transfers and regulates a charge current and a charge voltage from the capacitor portion to the chargeable battery portion,

and a chargeable battery portion - which can be of any type of [chargeable /] rechargeable battery cell(s) such as, but not limited to, NiCad, NiMH or Lithium-ion.

2. The energy storage and delivery device, according to claim 1, wherein the capacitor portion, when the unit is connected to an electrical energy source, instantaneously captures an electric charge [over a short period of time for the purpose of charging the chargeable battery portion] – after the capacitor portion has charged, the unit can then be disconnected from the electrical energy source;

the capacitor portion, when fully charged, transfers its electrical energy to the chargeable battery portion over an optimal period of time and at an optimal current throughout the [various stages of the] battery charging process;

this transfer and regulation of the charging current from the capacitor portion to the chargeable battery portion is accomplished via the charge circuit portion.

3. The energy storage and delivery device, according to claim 2, wherein the charge circuit portion detects when the capacitor portion is fully charged in order to begin the charging process of the chargeable battery portion;

the charge circuit portion also detects the amount of electric current required to optimally charge the chargeable battery portion – and regulates [varies] the charging current from the capacitor portion to the chargeable battery portion accordingly;

as the chargeable battery portion is being charged, the charge circuit portion is also able to detect when the electric device is in use, and therefore increase the rate of charge from the capacitor portion to the chargeable battery portion [transfer additional electric current] for the operation of the portable electronic device.